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AUTHOR	Rubin, Rosalyn A.; Krus, Patricia H.
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ABSTRACT

A study was conducted to validate a school behavior rating scale on a sample of 1,153 elementary school children. Results indicate stable means and variances over grades kindergarten through fifth grade and a stable factor structure. Sex differences on behavior ratings favored females over males at all grade levels. School behavior ratings obtained by subjects for whom special action, such as special placement or receipt of special services, had been taken by the schools were significantly lower than the mean score of those for whom no such actions had been taken. (Author)

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Validation of a School Behavior Rating Scale*

Rosalyn A. Rubin & Patricia H. Krus

University of Minnesota

This study was designed to validate a behavior rating instrument, the School Behavior Profile (SBP) (Balow, 1965) that can be readily scored by the classroom teacher for the purpose of identifying those children who are most likely to manifest problems of school behavior and adjustment.

Classroom teachers are in a unique position to make extensive observations of children in a variety of interactions on a continuing day-to-day basis. Directed observations of the child in the classroom can provide the basis for early recognition of those in need of special consideration to help prevent the development of more serious problems. The SBP was developed to aid the teacher in reporting the most relevant information for effective identification of children with social and emotional problems.

The SBP is a 68-item behavior checklist on which classroom teachers are asked to indicate the frequency of occurrence of specified observable behaviors on a four-point scale ranging from "Almost Always" to "Almost Never". Items are keyed so that the higher the total score the more positive the rating. The SBP was developed from an original pool of nearly 200 items selected from a variety of checklists and scales for

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the assessment of deviant behavior. Items that were repetitive or inappropriate for classroom use were eliminated while remaining items were transposed into words and short phrases that would be as far as possible clear and unambiguous. Further revisions were then made based upon critiques by a panel of psychologists and physicians and by a group of 15 elementary school teachers who completed SBP ratings for several of their pupils as part of a pilot project (Balow, 1968).

Procedure

Sample

Subjects in the present investigation were 1188 elementary school children in grades one through five who are participants in the Educational Follow-Up Project, a longitudinal study of the antecedents of school learning and behavior problems (Balow, et al, 1969). Subjects were all born at the University of Minnesota Hospitals between 1960 and 1964 and are currently attending elementary school in over 150 different school districts in the State of Minnesota with approximately 60% of the group residing within the Twin Cities metropolitan area.

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Insert Table 1 about here

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Although the study sample was not initially drawn in a random fashion from the general population, the IQ scores of study subjects are normally distributed about a mean of 103 on the Stanford-Binet and a mean of 102 on the WISC with standard deviations of 15.8 and 13.7, respectively (Rubin, 1972). The distribution of Socioeconomic Index scores for the

study sample closely approximates the distribution of these scores within the urban population of the North Central states (Myrianthopoulos & French, 1968). At both the pre-kindergarten and pre-first grade levels total language age scores on the ITPA closely approximate the actual chronological age of study subjects. On the MRT administered immediately prior to first grade entrance, scores of study subjects were equivalent to those reported for the MRT standardization population at beginning first grade level (Rubin, 1973).

Methods

During the spring of each school year classroom teachers of Educational Follow-Up Children are asked to complete SBP ratings for each study subject and to indicate on a separate form any special school placements or special services received by these children. The following are included under the category of special placement and services: placement in EMR special classes, placement in first grade transition rooms or in resource rooms, retention in grade, referral to school psychologist or school social worker, receiving remedial reading instruction or individual tutorial help. In addition teachers are asked to make a global judgment as to whether or not they consider the study child to be manifesting severe behavior problems.

The present analysis is based upon responses obtained from the teachers of 1188 study children in the Spring of 1971. For 932 of these subjects SBP ratings were also available from the classroom teachers for the previous year, thereby providing a measure of consistency of scores from one grade level to the next.

Analysis of variance procedures and t-tests of the significance of the differences between means were used to compare males with females and various special problem groups with the normal subjects. Two factor analyses of the SBP were conducted based on kindergarten and first grade subjects employing principal components analysis with varimax rotation for simple structure.

Results

Reliability

Two methods were used to estimate the reliability of the SBP. (1) Internal consistency - The instrument was divided into equivalent halves through odd-even assignment of items. Application of the Spearman-Brown correction for split-half correlation coefficients yielded a split-half reliability coefficient of .96. (2) Stability over time - The correlation between total SBP scores reported for the same 932 subjects by teachers from two consecutive grades in school was .50, indicating a considerable degree of consistency over time and teachers. It was not possible to determine from available data whether the changes in rank ordering of individuals which did occur were due to actual changes in behavior of specific subjects, to differences between teachers making the judgments, or to errors of measurement.

Factor Analysis

Two factor analyses of the SBP were conducted based on scores of kindergarten and first grade subjects from two different school years (N_1=413; N_2=571). Both analyses yielded the same three major factors: Factor 1 - Poor Control (23 items), Factor 2 - Developmental Immaturity

(15 items), and Factor 3 - Anxious or Neurotic (6 items). Following are representative items from each of the three factors:

Factor 1 - Poor Control - "Hot-tempered, easily aroused to anger".

Factor 2 - Developmental Immaturity - "Short attention span".

Factor 3 - Anxious - "Hypersensitivity, feelings easily hurt".

Normative Data

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Insert Table 2 about here

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As shown in Table 2 SBP mean scores and standard deviations for both boys and girls remained relatively stable over the grade range from one through five with total mean scores of 220.5 for boys and 231.8 for girls. Girls consistently scored higher than boys with significant differences ($p < .01$) favoring the girls overall and at each grade level with the exception of grade five where the difference was in the expected direction but failed to reach statistical significance.

Validity

Sex differences on SBP scores in favor of the girls provided one indication of the validity of the instrument since research findings show that boys do, in fact, have a higher incidence of behavior problems than do girls (Long, et al, 1965).

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Insert Table 3 about here

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Total mean scores of various groups of subjects referred for special placement or special school services were all significantly lower than the population mean of 226.0 ($p < .01$) as shown in Table 3. The group receiving the most negative behavior ratings consisted of subjects who were placed in classes for the educable mentally retarded. A previous investigation based on this same longitudinal study population (Rubin, Krus, & Balow, in press) found evidence that behavior ratings were one of the variables which differentiated between low IQ children placed in special classes and those of similar IQ who remained in regular classes with those placed in special classes receiving lower ratings.

Subjects referred for social work or psychological services and for individual tutorial help had the next highest ratings followed closely by remedial reading cases. Subjects who had been referred for speech therapy or who had been retained in grade received the highest behavior ratings among the special problem groups although their mean scores were still significantly lower than that of the total study population. The same rank ordering of special groups was found for mean scores on Factor 1 with slight variations in rank order on Factors 2 and 3.

All special groups scored significantly lower than the study population means on Factors 1 and 2 with the exception of the group referred for speech therapy, who differed significantly from the population mean only on Factor 2. On factor 3 the groups referred for speech therapy, for social work, and for psychological servies did not differ significantly from the population mean. Since Factor 3 consists of behaviors which are more indicative of personal feelings of sensitivity than of actions which tend to be disruptive to teachers or classmates, it would be anticipated that low scores on Factor 3 would be less likely to be related to referral for special services than would low scores on Factors 1 and 2.

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Insert Table 4 About Here

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Cut-off points on the distributions of SBP total scores were established at approximately one standard deviation below and one standard deviation above the mean for the total study population.

Seventy-two per cent of those subjects scoring at or below a SBP total score of 200 on the distribution for the total study population were identified by teachers as showing mild or severe problems of behavior and 74% of those scoring below this cut-off were identified by teachers as having attitude problems. Special school placements or special referrals had already been made for 54% of subjects scoring below the cut-off.

Forty-two per cent of all moderate behavior problems and 85.7% of all severe behavior problems within the total study population scored at or below the cut-off point of 200.

At the upper end of the distribution only 1.3% of subjects scoring at or above 250 on the SBP were identified as a behavior problem and only 12.2% had been the recipients of special school services. No subjects with severe behavior or attitude problems scored above the cut-off point of 250.

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Insert Figure 1 About Here

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As shown in Figure 1 the distribution of SBP total scores is negatively skewed with 190 (16%) of study subjects scoring at or below a raw score of 200. The majority of SBP items are descriptive of deviant behaviors with low scores indicating the presence of such behaviors. Therefore it is to be expected that the great majority of subjects in a sample which is representative of a normal school population would score within the upper portion of the range.

Summary of results

1. The distribution of SBP scores was consistent over the grade levels included in this study yielding equivalent means and standard deviations at each grade level from kindergarten through grade five.

2. There were significant sex differences on SBP total scores favoring females over males at all grade levels with the exception of grade five.

3. The correlation between total SBP scores reported for the same 932 subjects by teachers from two consecutive grades in school was .50, indicating a considerable degree of consistency over time and teachers.

4. Stability of the factor structure of the SBP was demonstrated by almost exact replication of factors extracted and per cent of common variance accounted for in two separate analyses. The major factors extracted were: 1) poor control-acting out; 2) developmental immaturity; and 3) anxious or neurotic.

5. While significant sex differences favor females over males on the factors of poor control-acting out and developmental immaturity, there were no sex differences on the anxious-neurotic factor.

6. SBP scores obtained by Ss for whom special action had been taken by the schools such as special placement or receipt of special services were significantly ($p < .01$) lower than the mean score of those for whom no such actions had been taken.

7. Among the various special problem groups children placed in special classes for the retarded had the lowest SBP total scores followed by those referred to the school psychologist and school social worker and by those receiving individual tutorial help.

8. Special school placements or special referrals had been made for 54% (45% of girls and 58% of boys) of all subjects who scored below a cut-off point established at approximately one standard deviation below the mean for SBP total scores.

Discussion

Validity data thus far obtained for the SBP indicate that this instrument can assist the classroom teacher to effectively identify children with problems of school adjustment and behavior. Further data are being analyzed regarding long-term predictions of school behavior problems based on SBP scores obtained in the first few years of elementary school.

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TABLE 1

SCORES OF EDUCATIONAL FOLLOW-UP POPULATION

ON MEASURES OF SES, IQ, AND ACADEMIC ACHIEVEMENT

Measure	$\bar{X}$	S.D.
Socioeconomic Index	52.6	18.7
Stanford-Binet (C.A. 4)	103.5	15.8
WISC (C.A. 7)	102.6	13.7
ITPA Total Lang. Age (C.A. 5)	59.0	11.5
ITPA Total Lang. Age (C.A. 6)	73.6	12.3
MRT Total Raw Score (C.A. 6)	55.1	
WRAT (Grade Placement 1.7)		
Reading Grade Equiv.	1.8	
Spelling " "	1.7	
Arithmetic" "	1.9	
SAT Grade Equivalent Scores:		
Grade 1 PM	1.7	
Grade 2 PM	2.8	
Grade 3 WM	3.7	
PM	3.4	
Grade 4 WM	5.1	
PM	4.9	
Grade 5 WM	5.8	
PM	5.9	

Table 2

School Behavior Profile

Total Scores by Grade and Sex

Grade	Total N	Total $\bar{X}$	Total S.D.	Males N	Males $\bar{X}$	Males S.D.	Females N	Females $\bar{X}$	Females S.D.	Signif. of Sex Diff. p
1	261	226.9	24.3	129	219.7	23.6	132	234.0	23.0	.001
2	270	226.7	24.8	138	222.7	26.8	132	231.0	21.8	.01
3	291	225.9	26.8	151	218.9	29.5	140	233.3	21.3	.001
4	225	224.5	25.3	119	219.3	26.6	106	230.4	22.6	.001
5	141	226.0	24.9	66	223.2	26.7	75	228.4	23.2	.20
TOTAL	1188	226.1	25.3	603	220.5	26.8	585	231.8	22.3	.001

Table 3

Mean SBP Total and Factor Scores for
Subjects Referred for Special Services

Group	N	SBP Total	Factor 1 PC	Factor 2 DI	Factor 3 Anx.
Study Population	1188	226.0	88.0	51.5	20.0
Special Services					
Speech	127	220.4*	86.6	49.5*	19.6
Retentions	159	219.1**	83.9**	47.8*	20.3
Remedial Reading	128	212.7**	81.6**	45.6**	19.3*
Tutorial	95	207.8**	79.2**	44.0**	19.3*
Psychological	85	207.3**	76.9**	45.8**	19.2*
Social Work	27	204.6**	72.9**	46.6**	18.8
EMR Special Class	32	189.5**	63.9**	43.4**	17.3**

* Different from the population $\bar{X}$ at the .05 level of significance

** Different from the population $\bar{X}$ at the .01 level of significance

Table 4

Per Cent of Problems Identified
Above and Below Specified SBP Cut-Off Scores

Problem Variables	Total Study Pop.		≤ 200			≥ 250		
	N	%	N	%	% of Total Pop. with this Rating	N	%	% of Total Pop. with this Rating
Behavior Problems (Teacher Ratings)								
No	893	75.8	51	26.4	5.7	227	98.7	25.4
Mild	231	19.6	97	50.3	42.0	3	1.3	1.3
Severe	49	4.2	42	21.8	85.7	0	--	--
Total	1178		190			230		
Attitude Problems (Teacher Ratings)								
No	864	72.7	48	24.9	5.6	225	97.8	26.0
Mild	245	20.6	92	47.7	37.6	5	2.2	2.0
Severe	57	4.8	50	25.9	87.7	0	--	--
Total	1166		190			230		
Total Number of Special School Placements and Referrals								
0	820	69.0	88	45.6	10.7	202	87.8	24.6
1	244	20.5	59	30.6	24.2	23	10.0	9.4
2	70	5.9	24	12.4	34.3	5	2.2	7.1
3	36	3.0	17	8.8	47.2	0	--	--
4	18	1.5	3	1.6	16.7	0	--	--
5	8	.1	2	1.0	25.0	0	--	--
Total	1188		193			230		

Figure 1

Distribution of SBP Total
Score for Total Study Population